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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/796,557

03/09/2004

Craig Van Buuren

10908/9 (MAJR)

1076

757 7590 01/22/2010  
BRINKS HOFER GILSON & LIONE  
P.O. BOX 10395  
CHICAGO, IL 60610

EXAMINER

FIORITO, JAMES

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

01/22/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/796,557	<b>Applicant(s)</b> BUUREN, CRAIG VAN	
	<b>Examiner</b> JAMES A. FIORITO	<b>Art Unit</b> 1793	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10/06/09.
- 2a) ☒ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 13 and 16-24 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25 is/are allowed.
- 6) ☒ Claim(s) 13 and 16-24 is/are rejected.
- 7) ☒ Claim(s) 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 13 and 16-24 are rejected under 35 U.S.C. 103(a) as obvious over Pennsylvania Department of Environmental Protection "Coal Mine Drainage Prediction and Pollution Prevention in Pennsylvania" in view of Crundwell US 2005/0211019 A1.**

With respect to claims 13, and 23, the Department teaches a method of simulating a process in which ore, in a heap, is microbiologically leached, the method including the steps of microbiologically leaching material, representative of the ore, in a housing defining an enclosed, confined volume, monitoring the temperature of the material, inside the volume, at each of a plurality of locations. (Figure 7.12).

The primary reference does not expressly teach controlling the heat loss from the confined volume effectively to zero.

Crundwell teaches that microbial heat leach systems have a take-off temperature where the reaction becomes auto-thermal (Paragraph [0139]). Therefore, at the time of invention it would be obvious to one of ordinary skill in the art to perform the process of heap leach simulation of the primary reference, including the step of controlling the heat

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loss from the confined volume effectively to zero, in view of the teaching of Crundwell.

The suggestion or motivation for doing so would have been to mimic the auto-thermal phenomenon of heap leaching. This rationale is supported by exemplary rationale (b) in section 2143 of the MPEP, "simple substitution of one known element for another to obtain predictable results." See MPEP §2143.

With respect to claim 16, the Department teaches a test column wherein a controlled temperature gradient is established (Figure 7.12).

With respect to claim 17, 20, the test column inputs leach liquid in the top and air in the bottom (Figure 7.12).

With respect to claim 18, the leach liquid is added at the upper end (Figure 7.12).

With respect to claim 19, the gas is added at the lower end (Figure 7.12).

With respect to claim 22 and 24, the temperature is controlled by the liquid bath (Figure 7.12).

### ***Allowable Subject Matter***

Claim 25 is allowed.

Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Claims 15 and 25 are allowable over the prior art because neither the Department or Crundwell teaches separately controlling the operation of each of a

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plurality of heat sources which are positioned at predetermined locations within the confined volume.

### ***Response to Arguments***

Applicant's arguments filed 10/06/09 have been fully considered but they are not persuasive.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant argues there is nothing in Crundwell nor the primary reference that teaches controlling heat loss from the confined volume. In response, the Department shows the test column is surrounded by insulation and put into contact with a heat exchanging fluid (Figure 7.12). Such apparatus features are inevitably used to control heat loss in some way.

Applicant argues that Crundwell teaches away from controlling heat loss because after auto-thermal conditions are achieved the heap is cooled, and cooling would not control heat loss effectively to zero. In response, Crundwell teaches away from controlling the heat loss effectively to zero in actual heap leaching process, but this is irrelevant to the question of whether it would have been obvious to control the heat loss effectively to zero in the process of simulating the heap in a column. In contrast, under

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testing conditions a researcher would be motivated to control the heat loss effectively to zero in order to quantify the amount of heat produced from the auto-thermal phenomena, or determine the ultimate temperature within the heap the phenomena would create when no cooling was applied to the heap.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES A. FIORITO whose telephone number is (571)272-7426. The examiner can normally be reached on 9am - 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/James A Fiorito/

Examiner, Art Unit 1793

/Stanley Silverman/

Supervisory Patent Examiner, Art Unit 1793